

A1  
5. (Amended) A thermocouple as claimed in claim 1 in which refractory material includes particulate borosilicate and boric acid powder.

A2  
7. (Amended) A thermocouple as claimed in claim 5 in which the boric acid comprises about 3% to 5% weight of the refractory material.

8. (Amended) A thermocouple as claimed in claim 5 in which the boric acid content of the refractory material is about one half of the borosilicate content.

9. (Amended) A thermocouple as claimed in claim 2 in which the tubes of the sheath are stainless steel.

10. (Amended) A thermocouple as claimed in claim 2 in which the refractory material is predried at a temperature of between 135° and 150°C.

A3  
12. (Amended) A thermocouple as claimed in claim 2 in which the refractory material is beaded before being formed into the sheath.

13. (Amended) A thermocouple as claimed in claim 1 in which the tip is formed from a thermocouple cable with a negative metal tube housing a positive wire embedded in a low temperature sintering material.

A3

14. (Amended) A thermocouple as claimed in claim 1 in which the tip is formed by providing a hot junction from the wires of the thermocouple cable and supported by a sheath as above defined with both tubes and the refractory formed to cap the hot junction.

15. (Amended) A thermocouple as claimed in claim 2 in which the outer tube of the sheath is annealed after the constriction process and the refractory material at least partially sintered during the annealing process.

Please add the following new claims 18-21:

18. A thermocouple as claimed in claim 2 in which refractory material includes particulate borosilicate and boric acid powder.

19. A thermocouple as claimed in claim 6 in which the boric acid comprises about 3% to 5% weight of the refractory material.

20. A thermocouple as claimed in claim 6 in which the boric acid content of the refractory material is about one half of the borosilicate content.

21. A thermocouple as claimed in claim 7 in which the boric acid content of the refractory material is about one half of the borosilicate content.